



Tropentag, September 18-20, 2019, Kassel

“Filling gaps and removing traps  
for sustainable resource management”

## Women’s Age and Eating Time Determine Impact of Nutrition Education on Dietary Diversity Scores of Women and Children in Uganda and Kenya

IRMGARD JORDAN<sup>1</sup>, BÁRBARA FRÓES<sup>1</sup>, M. GRACIA GLAS<sup>1</sup>, ANNA RÖHLIG<sup>1</sup>, SAMWEL MBUGUA<sup>2</sup>, JULIUS TWINAMASIKO<sup>3</sup>, SAHRAH FISCHER<sup>4</sup>, LYDIAH M. WASWA<sup>2</sup>, JOHNNY MUGISHA<sup>5</sup>, JENINAH KARUNGI<sup>5</sup>, ELIZABETH KAMAU<sup>2</sup>, THOMAS HILGER<sup>4</sup>, ERNST-AUGUST NUPPENAU<sup>6</sup>

<sup>1</sup>*Justus-Liebig University Giessen, Center for International Development and Environmental Research, Germany*

<sup>2</sup>*Egerton University, Department of Human Nutrition, Kenya*

<sup>3</sup>*Makerere University, Dept. of Agribusiness and Natural Resource Economics, Uganda*

<sup>4</sup>*University of Hohenheim, Inst. of Agric. Sci. in the Tropics (Hans-Ruthenberg-Institute), Germany*

<sup>5</sup>*Makerere University, School of Agricultural Sciences, Uganda*

<sup>6</sup>*Justus-Liebig University Giessen, Inst. of Agric. Policy and Market Res., Germany*

### Abstract

Poor dietary diversity lead to malnutrition, especially for vulnerable individuals such as mothers and infants. The objective of this study was to assess the impact of nutrition education (NE) on time-use and dietary diversity of women and children in Kapchorwa District, Uganda, and Teso South Sub-County, Kenya.

In June 2016 and 2017 cross-sectional agriculture-nutrition surveys were conducted, targeting approx. 830 farm households with children aged below five years. Women Dietary Diversity (WDDS) and Child Dietary Diversity Scores (CDDS) were calculated based on data from 24h-dietary-recalls. Time use was assessed based on 24h-physical-activity-recalls. NE was conducted and partly linked with agriculture extension (AGNE). Groups with no intervention were included in analysis for comparison.

The results showed that a gendered division of labour, and beyond the time spent on farming, women were engaged in child care and domestic activities, had therefore a longer workday and significantly less free time than men. The control group had a significant decrease in  $\Delta$ WDDS in the year of the intervention which was a drought year. The age of the mother explained partially the variance in  $\Delta$ WDDS but differently in both countries.

In Uganda children of the NE group showed a significant increase in CDDS (M diff=0.31 point). Differences in  $\Delta$ eating time of mothers was statistically significant related to CDDS ( $p = 0.045$ ).

Differently from the results of Uganda, the moderation analysis of Kenya confirmed that participation in the intervention resulted in a slight increase in women’s dietary diversity scores. In terms of development, according to Bonferroni post hoc test, the changes on scores were statistically significant higher in the AGNE (M diff=0.580 points,  $p = 0.013$ ) and NE groups (M diff=0.613 points,  $p = 0.007$ ) when compared to the control group. The eating time of mothers in Kenya was positively statistically significant associated with

CDDS after the intervention in all three groups. This indicates that the more time mothers spent eating/feeding their children, infants' diets became more diverse.

Attention should be given to gender-time-use in agriculture and nutrition intervention to enhance impact of nutrition education and agriculture interventions.

**Keywords:** Agriculture innovations, gender, Kenya, nutrition education, time use, Uganda